



# ICAO ENGINE EXHAUST EMISSIONS DATA SHEET

## SUBSONIC ENGINES

ENGINE IDENTIFICATION: PW2040 BYPASS RATIO: 5.5  
 UNIQUE ID NUMBER: 4PW073 PRESSURE RATIO ( $\pi_{co}$ ): 29.4  
 COMBUSTOR:  
 ENGINE TYPE: TF RATED THRUST ( $F_{oo}$ ) (kN): 182.0

### REGULATORY DATA

CHARACTERISTIC VALUE:	HC	CO	NO <sub>x</sub>	SMOKE NUMBER
D <sub>p</sub> /F <sub>oo</sub> (g/kN) or SN	3.0	32.6	60.4	12.5
AS % OF ORIGINAL LIMIT	15.3	27.6	61.1	62.2
AS % OF CAEP/2 LIMIT (NO <sub>x</sub> )			76.4	
AS % OF CAEP/4 LIMIT (NO <sub>x</sub> )			91.5	
AS % OF CAEP/6 LIMIT (NO <sub>x</sub> )			103.9	
AS % OF CAEP/8 LIMIT (NO <sub>x</sub> )			122.6	

### DATA STATUS

- PRE-REGULATION  
 - CERTIFICATION  
 x REVISED (SEE REMARKS)

### TEST ENGINE STATUS

x NEWLY MANUFACTURED ENGINES  
 - DEDICATED ENGINES TO PRODUCTION STANDARD  
 - OTHER (SEE REMARKS)

### EMISSIONS STATUS

x DATA CORRECTED TO REFERENCE  
 (ANNEX 16 VOLUME II)

### CURRENT ENGINE STATUS

(IN PRODUCTION, IN SERVICE UNLESS OTHERWISE NOTED)  
 x OUT OF PRODUCTION (DATE: - )  
 - OUT OF SERVICE (DATE: - )

### MEASURED DATA

MODE	POWER SETTING (%F <sub>oo</sub> )	TIME (minutes)	FUEL FLOW (kg/s)	EMISSIONS INDICES (g/kg)			SMOKE NUMBER
				HC	CO	NO <sub>x</sub>	
TAKE-OFF	100	0.7	1.752	0.01	0.32	35.04	4.5
CLIMB OUT	85	2.2	1.445	0.02	0.41	26.62	9.5
APPROACH	30	4.0	0.496	0.10	1.42	10.49	3.6
IDLE	7	26.0	0.159	1.65	19.95	4.37	1.0
LTO TOTAL FUEL (kg) or EMISSIONS (g)			631	426	5219	9989	-
NUMBER OF ENGINES				2	2	2	2
NUMBER OF TESTS				4	4	4	4
AVERAGE D <sub>p</sub> /F <sub>oo</sub> (g/kN) or AVERAGE SN (MAX)				2.3	28.6	54.9	10.7
SIGMA (D <sub>p</sub> /F <sub>oo</sub> in g/kN, or SN)							
RANGE (D <sub>p</sub> /F <sub>oo</sub> in g/kN, or SN)							

### ACCESSORY LOADS

POWER EXTRACTION 0 (kW) AT - POWER SETTINGS  
 STAGE BLEED 0 (% CORE FLOW) AT - POWER SETTINGS

### ATMOSPHERIC CONDITIONS

BAROMETER (kPa)	100.6-100.9
TEMPERATURE (K)	283.4-298.2
ABS HUMIDITY (kg/kg)	0.007-0.008

### FUEL

SPEC	Jet A
H/C	
AROM (%)	

MANUFACTURER: Pratt & Whitney  
 TEST ORGANIZATION: P&WA  
 TEST LOCATION: East Hartford, CT  
 TEST DATES: 08/08/1983-20/11/1998

### REMARKS

1. Revision to add second engine test.

Compliance with Fuel Venting requirements:

- ('x' if complies, 'PR' if pre-regulation, '-' if information is not available)